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TANGANYIKA

ANNUAL REPORT

on

DEVELOPMENT

1954

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CONTENTS

	Page
INTRODUCTION	1
I.—GENERAL FACTORS IN ECONOMIC DEVELOPMENT:	
COMMUNICATIONS:	
Roads	2
Railways	4
Harbours	5
Aerodromes and Air Transport	5
Posts and Telecommunications	6
WATER, FUEL AND POWER	7
LAND	10
LABOUR	10
CURRENCY AND CREDIT FACILITIES	12

ERRATA

Page 4. First paragraph. Line 4: *For* "6 Ton Albion Lorries" *read* "10 5-Ton Albion Lorries".

Page 4. Railways—second paragraph. Line 8: *For* "260,000 Tons" *read* "285,000 Tons".

Page 5. Harbours—third paragraph. Line 4: *For* "greater" *read* "less".

INTERNAL AND EXTERNAL TRADE...	28
APPENDIX I.—The Development Plan: Progress Reports	31
APPENDIX II.—The Development Budget: Statement of Expenditure... ...	40

CONTENTS

	Page
INTRODUCTION	1
I.—GENERAL FACTORS IN ECONOMIC DEVELOPMENT:	
COMMUNICATIONS:	
Roads	2
Railways	4
Harbours	5
Aerodromes and Air Transport	5
Posts and Telecommunications	6
WATER, FUEL AND POWER	7
LAND	10
LABOUR	10
CURRENCY AND CREDIT FACILITIES	12
PUBLIC FINANCE	14
.—PRODUCTION AND TRADE:	
AGRICULTURE	16
FISHERIES	18
LIVESTOCK	20
FORESTRY	21
MINING	21
GEOLOGICAL SURVEY	25
INDUSTRY	25
INTERNAL AND EXTERNAL TRADE...	28
APPENDIX I.—The Development Plan: Progress Reports	31
APPENDIX II.—The Development Budget: Statement of Expenditure... ...	40

TANGANYIKA

Report on Development, 1954

INTRODUCTION

In order that the format of the two previous reports on Development in Tanganyika might be followed, it has of necessity meant that delays have occurred in the publication of this report for 1954, largely owing to the difficulties in obtaining all the statistics. In spite of the delay, however, it is suggested that the information now available may be of use to anyone who wishes to make a general assessment of the economic progress in the Territory during the past year.

During 1954 it can be judged that economic development, if it has not perhaps been startling, has nevertheless been constant. Perhaps it has to some extent been a year marked for the fruition of several large scale projects. The new deep water quays at the port of Mtwara were completed and opened, while a reconstruction scheme at Tanga Port, costing over £1,000,000 was finished, as a result of which the capacity of the port has been doubled. The long awaited additional rolling stock and new locomotives began to arrive in appreciable quantities. All this enabled the East African Railways and Harbours to cope with the increasing amount of traffic without serious difficulty and delay. During 1954, too, the trunk roads from Dar es Salaam to Morogoro and from Tanga to Korogwe were completed, projects which had taken long to plan and construct, and which together cost some £3,000,000. In October the Territory was honoured by a visit from the Secretary of State for the Colonies, who was invited for the opening of the new airport in Dar es Salaam. This airport, completed at a cost of just under £900,000, is of International C class and capable of handling any aircraft, including jet propelled airliners, likely to come to East Africa, and is one of the finest in East or Central Africa. These achievements together with considerable success in the agricultural sphere with record crops of cotton, cashew nuts, flue cured tobacco and tea, a steady output of sisal and coffee, Tanganyika's two most important exports, and the fulfilment of a large programme of water development works in rural areas, indicate that economic progress has been well maintained during 1954.

From the time a decision is made to undertake any particular project, to the day when that project is completed, the period always seems inordinately long—more particularly for the planning or survey stage. It is therefore essential to plan well in advance especially in a developing territory such as this where untoward setbacks often cause delay. During 1954 much attention was given to planning and to initial investigation. The preliminary works for the survey of the Rufiji basin were started. The further expansion of the Water Development Department was under consideration.

In the sphere of communications, plans for the future development of the road system were framed and several road surveys including that for a major diversion of the Great North Road to avoid the Mporotos Mountains, were undertaken. Among other projects which were either in the planning stage or on which work actually started were a new water supply for Dar es Salaam, costing approximately £1,500,000, a new hospital costing £750,000, St. George's and St. Michael's

schools at Iringa, on which work was started and on which £1,000,000 will eventually be spent. Work on the Trade schools continued while the plans for the new Technical Institute were well advanced. Good progress was also made towards the completion of the Police Training Depot at Moshi, the Morogoro-Iringa Road and the Dodoma Water Supply.

These examples of accomplishment, of planning and of progress, serve to show that 1954 was a very busy year—in fact the strain on both administrative and technical staff was considerable. It would be smug to suggest that development progress was entirely satisfactory. There will always be delays or setbacks and there is always more to be done than can actually be accomplished. It may be lack of supplies or technical staff, it may be the failure of the human element, it may be shortage of labour that cause some works or projects to go slowly and others to advance more quickly. But there are grounds for stating that progress was reasoned and reasonable, and that by and large a considerable development was accomplished.

I.—GENERAL FACTORS IN ECONOMIC DEVELOPMENT

Communications

The Government of Tanganyika, which is responsible for roads and aerodromes, and the East Africa High Commission, which controls Railways and Harbours, Posts and Telecommunications, and air control and air radio services, plan to spend some £22 million on Tanganyika communications in the period 1953-1956.

Roads

The aim of the programme of road construction and improvement is eventually to provide a system of all-weather roads throughout the Territory. This will involve linking the road system of the Lake and Western Provinces with that of the remainder of the country, improving the Great North Road from Arusha to Dodoma and Mbeya in the south, and the tenuous link between Dodoma and Morogoro, constructing two new roads from the southern border to the northern one in the far west and another near the coast in the east, and providing high-class roads between the ports of Tanga, Dar es Salaam and Mtwara and the exporting areas in the interior which they serve. This master plan will take a number of years and a great deal of money to complete. Each year the aim is to construct or improve such sections of trunk roads as are most urgently required in the light of economic development. A system of feeder roads is also planned which will receive attention in accordance with the development of the areas which they serve. The plan is not of course rigid or inflexible since unforeseen developments may warrant a number of changes.

As a corollary to this plan a steady improvement of both the standard of ferries and their maintenance is being undertaken.

The initial programme of major road construction to the designs of consulting engineers was virtually completed by contract at the end of the year. All these roads were open to traffic although restrictions were imposed in certain cases. Maintenance for the greater part of these comparatively high standard roads became the task of the Public Works Department—a considerable additional responsibility.

The total mileage of main roads (territorial and local), township and district roads is now 18,440. Of this total, main roads, maintained by the Public Works Department account for 7,101 miles, and district roads maintained by the

Provincial Administration 10,874 miles. The Public Works Department with one or two exceptions also maintains the roads in Townships on behalf of the Township Authorities. The mileage of bituminous surfaced roads in the Territory outside Townships now amounts to 244.

The final survey for a new crossing of the Rufiji River on the road south from Dar es Salaam, together with the approaches was completed, whilst the preliminary survey south of the river was in hand. A preliminary survey was made of a new line westward from Nachingwea to beyond Tunduru, and of the Ilemba Gap on the Mpui-Ilemba Road, the latter for the International Red Locust Control Organization. Other surveys were that for the Mporotos Diversion on the Great North Road, the Mwanza-Biharamulo Road, the East West Link Road and the Mbagalla-Mjimwema Road.

Maintenance and Minor Improvements

Maintenance funds are used for routine maintenance and also minor improvements to drainage and the shape of the road. Of necessity the amounts available for these latter items are small and consequently progress on general improvement slow. Now that needs are appreciated and work properly programmed, a definite improvement will continue, limited only by the availability of funds. Trained junior supervisory staff is most necessary for road maintenance works, with their very considerable spread. Every effort is now being made to recruit properly qualified men. In many parts of the Territory road labour was below strength, mainly because the counter attractions of growing cash crops or working on sisal estates were too strong. Whatever mechanical maintenance is carried out, a large number of labourers amounting to about 10,000 men is still necessary.

The average cost of maintaining main roads is now between £60 and £80 a mile according to location and special circumstances, while £180 and £280 is allowed for the new stabilized gravel and bituminous surfaced roads respectively. The latter figure is an average, allowing for resealing every fourth year. It is hoped that the £180 a mile allowed for the new gravel surfaced roads will not only be sufficient to replace surface material removed by wear and tear, but will also allow for a gradual building up of the gravel pavement. Whether this can be accomplished or not will undoubtedly depend on the volume, weight and speed of traffic using these roads.

In Dar es Salaam, the Motor Transport Company again recorded an increase in mileage and passengers carried. The figures are:—

	1951	1952	1953	1954
Number of Buses	20	24	30	30
Mileage	682,626	807,587	962,486	1,071,817
Passengers Carried ..	4,927,787	7,081,705	8,287,901	8,809,203

For the rest, road transport is in the hands of a very large number of operators, many of whom run only one or two vehicles and operate with very low overhead costs. The principle of introducing transport licensing has been accepted by Government and a Bill is to be presented to Legislative Council in 1955.

NUMBER OF MOTOR VEHICLES OPERATING ON TANGANYIKA HIGHWAYS

	Lorries and Buses	Other Vehicles	Total
1938	1,731	3,444	5,175
1948	5,648	5,697	11,345
1953	7,415	12,948	20,363
1954	7,053	17,146	24,199

The number of seven-ton vehicles continues to increase.

The road services of the East African Railways and Harbours Administration operate over 1,631 route miles. During 1954 the vehicle fleet was supplemented by additions as follows:—

6 10-ton Albion Lorries
4 5-ton Trailers
5 1,500-gallon Tankers

The new Road Service Depot started at Morogoro in late 1953 was practically completed at the end of 1954. The construction of a new Depot at Mbeya was also started in 1954.

Railways

Nearly £3¼ million was spent on capital works in Tanganyika during 1954, bringing the total spent since the amalgamation of the Railways with those of Kenya and Uganda in 1948 to £15¼ million. New Rolling Stock accounted for £1,800,000 of the money spent. Stone ballasting for the Central and Tanga Lines was put in hand during 1954 together with a regrading and realignment programme on the latter. Strengthening of bridges and improvements to water supplies on the Central Line was also started together with control facilities and telecommunications. In July the Southern Province Railway from Mtwara to Nachingwea via Ruo was opened for the carriage of passengers and goods traffic.

During the year on the Central and Southern Province Lines, Road and Lake Services in Tanganyika (the Tanga Line being incorporated with the Kenya and Uganda Section so far as operations, accounting and statistics are concerned) passenger traffic increased by 1·3 per cent compared with 1953. The approximate number of journeys made being 1,321,500. Goods tonnage increased from 657,000 tons in 1953 to 731,000 tons in 1954. Ton miles were greater by 10·7 per cent, totalling approximately 250,960,000. Approximately 260,000 tons were railed up-country from Dar es Salaam during 1954, an improvement over the previous year of 4 per cent. The volume of goods moved inland from Tanga was slightly less than the previous year. Difficulty was experienced towards the end of the year on the Central Line due to semi-drought conditions and it was necessary to rail water to various points for locomotive purposes.

New works in hand during 1954 included relaying of track with heavier section rail on a portion of the Central Line. Oil fuel installations were in hand and nearing completion on the Central Line whilst main line locomotives were being converted to oil burning. Investigations for improving locomotive water supplies on the Central Line were practically completed and actual work was put in hand. A major scheme to bring water from the Sagara Springs near Kongwa to Msagali was well under way by the end of the year with completion expected in the first quarter of 1955. Additions and alterations to the Apprentices Training School at Tabora were nearing completion towards the end of the year and a Central Office Block at Mtwara in the Southern Province was also started during 1954 and by the end of the period under review was practically completed. Work continued throughout the year on a comprehensive programme of housing, this programme being continuous and expected to carry forward into 1955 and the years ahead.

CENTRAL LINE, RAILWAY ROAD SERVICES AND TANGANYIKA STEAMSHIP SERVICES

	Number of Passenger Journeys	Weight of Goods Carried		Ton-Mileage of Traffic	
		Tons	Index (1948 = 100)	Ton-Mileage	Index (1948 = 100)
1948	1,294,000	382,000	100	128,500,000	100
1953	1,189,000	657,000	172	226,670,000	176
1954	1,321,500	731,000	222	250,960,000	951

TANGA LINE

	Number of Passenger Journeys	Weight of Goods Carried — Tons	
1948	905,000	160,000	Not available as figures combined with Kenya line but considerably increased Traffic was handled.
1953	903,000	—	
1954	733,000	—	

Harbours

The execution of planned Harbour works between 1948 and 1956 continued in accordance with the programme. At Dar es Salaam the construction of three Deep Water Berths continued satisfactorily and by the end of the year, although previous completion expectations have not been achieved, the berth scheduled for use by Belgian traffic to the Congo was well under way. The construction of an office block and transit shed was in hand. The extension to the Lighterage Wharf at Tanga was completed during 1954 and officially opened at the end of the year.

In the Southern Province the two new Deep Water Berths at Mtwara which had been under construction since 1947 were completed and the port opened to full operation in July.

Total imports handled during 1954 at Dar es Salaam, Tanga, Lindi and Mtwara/Mikindani at approximately 704,000 tons were 5·4 per cent greater in volume than in the previous year whilst the export tonnage at approximately 476,500 tons was greater by 1·9 per cent.

On Lake Victoria services have been maintained by the *Rusinga* and *Usoga*, congestion being relieved at intervals by the introduction of an extra vessel as conditions indicated. On Lake Tanganyika the *S.S. Liemba* was withdrawn from service at the beginning of the year because of defects in the boilers and subsequent detailed examination revealed the fact that it would be necessary to return these to the United Kingdom for repairs. During the year services were maintained by the *M.V. Mwanza* which carries third class passengers and a few upper class passengers by special arrangement and tows a cargo carrying lighter. On occasions a vessel was hired from the C.F.L. in order to give an improved service.

WEIGHT OF GOODS HANDLED IN TONS

Harbours	Dar es Salaam		Tanga		Southern Province	
	Imports	Exports	Imports	Exports	Imports	Exports
1948	333,000	171,000	70,000	136,000	89,000	45,000
1953	530,000	241,000	99,000	177,000	40,000	69,000
1954	570,000	237,000	90,000	170,000	46,000	69,000

NET REGISTERED TONNAGE OF STEAMSHIPS ENTERING TANGANYIKA PORTS

1938	3,070,545
1948	2,287,368
1953	4,356,019
1954	4,961,111

Aerodromes and Air Transport

Tanganyika has 47 aerodromes and landing strips. The Airport in Dar es Salaam, which continues to have more scheduled service movements than any other in East Africa, was replaced by a new one of Internationals Class "C"

standard at the cost of £881,000. This is capable of use by all aircraft that a likely to come to East Africa in the foreseeable future. This airfield was opene by His Excellency the Governor in the presence of the Right Honourable Ala Lennox Boyd.

Terminal buildings and runway extensions have been constructed at many the smaller aerodromes in pursuance of Government's policy of providing a populous areas with airfields of International Class "F" standard. In particula a new replacement aerodrome was completed at Mwanza and work is proceedin on the new aerodrome at Kilwa. Improvements are in hand at Mtwara, Iring and Kigoma.

There are eleven radio stations in the Territory.

The East African Airways Corporation provide regular and frequent service to all the more important towns within the Territory and to the neighbourin countries of Kenya, Uganda and Zanzibar, together with a regular service to th Central African Federation and South Africa. A weekly tourist service betwee Dar es Salaam and London is operated by British Overseas Airways Corporatio throughout the year. Central African Airways provide direct communicatio between Dar es Salaam and the Central African Federation and between Mbey and Blantyre, while Sabena operate a route to the Belgian Congo. Caspair A Charters operate a regular service around Lake Victoria. Adequate chartere services are available on request.

MAJOR AERODROMES SUMMARY OF AIRCRAFT MOVEMENTS AND PASSENGERS

	Aircraft Movements	Passengers Handled
1938	6,862 ..	6,461
1948	19,644 ..	54,009
1953	17,784 ..	119,509
1954	19,900 ..	133,000

Posts and Telecommunications

The postal administration has continued to provide a full range of service except for house-to-house delivery by postmen. Improvements effected in ma transport and other services include an increase to six in the number of travellin post offices attached to trains on the main railway lines. The daily servic between Moshi and Arusha connecting with the main north to south trunk roa service provides a valuable link for surface mail. In addition to the daily inter territorial air mail services there are now regular despatches from once to fou times weekly from Dar es Salaam to nineteen up-country centres.

The number of departmental post offices has been increased from eighty-thre to eighty-five. There are also seventy-six postal agencies operated by officers o the Provincial Administration, the Railways and Harbours Administration, or b private persons under contract. During the year 930 new private boxes wer installed at Post Offices throughout the territory, bringing the total now in use t 8,226. The use of the private bag service was also increased.

The number of exchanges operated by the Post Office telephone service is nov sixty-one, connected by 10,778 miles of wire—a further 14,782 miles link th exchanges to the subscribers. The capacity of exchanges throughout the territor has been increased by 1,730 lines during the year, giving a total capacity of 7,27 lines. Seventy-six public call offices are now in operation and 9,577 instrument are connected to the system, as compared with sixty-four public call offices an 8,282 instruments at the end of 1953. Three new manual exchanges were opened

Radio Telephone Services are now available to most Commonwealth and European countries, and to North and Central America. Ship to shore services are available for ships within 400 miles of Mombasa.

The second V H F multi-channel radio route between Tanga and Mombasa has been brought into operation. Work on the projected Dar es Salaam-Dodoma Dodoma-Moshi, and Moshi-Nairobi V H F routes has reached an advanced stage.

New trunk lines were brought into service between Tabora-Kigoma, Nanganga-Masa si and Korogwe-Handeni.

Work on the extension of the trunk route from Iringa to Mbeya was nearly completed.

The number of centres for the acceptance of telegrams was increased by three during the year to a total of 195 and six teleprinter circuits are now in use between the main centres. Radio stations have been established at three more centres bringing the total to twenty-eight. In sixteen cases these stations provide the only means of telegraphic communication. Two stations previously served by radio are now served by high grade carrier V/F equipment. A ship-to-shore radio telegraph service is available between Dar es Salaam, Lindi and ships at sea within a range of approximately 400 and 200 miles respectively.

POSTS AND TELECOMMUNICATIONS STATISTICS

	Letters Handled	Parcels Handled	Telegrams Handled	Telephone Calls
1938	7,066,000 ..	99,400 ..	443,900 ..	2,031,000
1948	14,580,000 ..	191,800 ..	696,600 ..	5,128,000
1953	21,564,000 ..	233,600 ..	834,000 ..	7,331,269
1954	21,103,000 ..	244,600 ..	806,300 ..	8,555,188

Water, Fuel and Power

Water

The importance of developing water supplies for agricultural, domestic and industrial use in this land of few perennial rivers and uncertain rainfall is reflected in the Territorial Development Plan. The expenditure of £2,500,000 is planned for the extension of township supplies in the period 1950-1956 and £1,500,000 to be supplemented by increasing contributions from Native Authorities for the development of supplies to rural areas.

Running costs of all Township supplies for the first six months of the year were £44,875. Revenue was £67,244. The figures for the whole of 1953 were expenditure £74,326 and revenue £120,634.

With the expansion of irrigation, the activities of the Water Development Department increased considerably during 1954, and great strides were made in collection of hydrological data, initiation of air and engineering ground surveys, construction of offices, purchase of heavy earthmoving machinery, plant and scientific equipment, and above all with the recruitment of additional staff.

The organization now exists to carry out the policy of full development of the water resources of the territory.

Preliminary investigations of irrigation schemes were carried out in several provinces. Collection of further hydrological and geophysical data as well as surveys of sites for detention reservoirs and pilot schemes for the ultimate

development of the Rufiji Basin were continued by the team of experts sponsored by the Food and Agricultural Organization.

More emphasis is being laid on speedier development of water resources including irrigation and water supplies for agricultural, domestic and industrial use. Unfortunately this country is not endowed with an abundant, well distributed rainfall or many perennial rivers. It follows that the flood run-off, however meagre, during the short wet season, must be harnessed and water thus conserved made to serve man and beast.

A Water Court Judge has been appointed and has spent the period since his appointment in studying the workings of the water law in Southern Rhodesia and in drafting the appropriate regulations to the territorial water ordinance.

Government Electricity Supplies

A small station of 5 kw. capacity was completed at Kasulu and another at Ilonga. The number of Government operated stations is now 15. New X-ray plants were installed at Lushoto and Korogwe Hospitals. The electrical installation at the new Dar es Salaam Airport was completed, together with its complex remote control switch gear.

Public Electricity Supplies

These are provided by two subsidiary companies of the East African Power and Lighting Company Limited, namely the Tanganyika Electric Supply Co. Ltd., which supplies a concession area contained within an imaginary circle of sixty miles radius centred on the Grand Pangani Falls Power Station and also exports power to Mombasa; and the Dar es Salaam and District Electricity Supply Co., Ltd., which supplies Dar es Salaam and eleven other districts in the territory.

All major townships in the Territory are supplied either by the Dar es Salaam & District Electric Supply Co. Ltd., or the Tanganyika Electric Supply Co. Ltd., and of the methods of generation, 66 per cent of the load is met from hydro-electric sources and the balance from thermal plant, mainly diesel.

A 17,500 kw. hydro-electric station is in operation on the Pangani River, and schemes are in hand to apply some part of the power from the fully developed potential of the Pangani Falls, probably a maximum of 50,000 kw. to Dar es Salaam and the Central Line, as well as towards maintaining and extending the requirements of the Tanga Province.

A total of 10,090 kw. of diesel plant at Kurasini Power Station at present serves Dar es Salaam and the surrounding area, and plans provide for the erection of a further 2,270 kw. Harland & Wolff set in 1955. Additional supply undertakings are operated by the Company at Morogoro, Dodoma, Moshi, Arusha, Tabora, Mwanza, Kigoma, Iringa, Mbeya, Lindi and Mtwara. At Nachingwea the Company runs an undertaking on behalf of the Tanganyika Agricultural Corporation.

An indication of the steady expansion of these Branches may be gained from the enclosed statistics on the following page.

Because of the great distances between Townships in the Territory, separate Power Stations are required to serve individual settlements, and the haulage of fuel oil, which in some cases has to be transported 600 miles from a port, has

resulted in high costs of generation. A full-scale examination of the Territory's hydro-electric potential, together with the amalgamation of the two Companies and the possibility of exporting power from the Pangani Falls to Dar es Salaam and the Central Line are problems on which the Company's consultants are at present engaged.

ELECTRICITY SUPPLIES IN TANGANYIKA

Comparative Figures for 1946, 1953 and 1954

Branch	Year	Units Sold	Maximum Demand kw	Plant Installed kw	Consumers Connected
Dar es Salaam	1946	4,137,000	1,212	1,586	2,962
	1953	18,808,000	5,340	7,820	7,266
	1954	19,641,000	5,290	10,090	8,011
Morogoro	1946	—	—	—	—
	1953	565,000	260	360	347
	1954	822,000	340	540	428
Dodoma	1946	41,000	26	175	240
	1953	729,000	240	350	661
	1954	689,000	240	350	696
Moshi	1946	986,000	380	560	238
	1953	3,052,000	960	1,520	1,056
	1954	3,392,000	1,080	1,520	1,140
Arusha	1946	466,000	114	260	103
	1953	2,259,000	590	684	909
	1954	2,187,000	590	1,040	954
Tabora	1946	210,000	73	284	319
	1953	575,000	282	550	616
	1954	664,000	292	550	674
Mwanza	1946	18,000	96	200	359
	1953	1,084,000	500	660	848
	1954	1,318,000	600	660	1,139
Kigoma	1946	48,000	26	125	101
	1953	99,000	68	157	168
	1954	123,000	76	207	175
Iringa	1946	—	—	—	—
	1953	528,000	200	540	300
	1954	725,000	210	540	325
Mbeya	1946	—	—	—	—
	1953	422,000	148	240	273
	1954	510,000	163	240	323
Lindi	1946	—	—	—	—
	1953	460,000	200	475	453
	1954	464,000	160	475	482
Mtwara	1946	—	—	—	—
	1953	1,000	10	154	11
	1954	55,000	44	154	76
Tanganyika Electric Supply Co.	1947	13,828,000	5,050	7,500	972
	1953	44,410,000	11,700	17,500	2,246
	1954	54,614,000	14,050	17,500	2,373

LAND

The Policy of land utilization in the territory is based on the conviction that the vast undeveloped land resources can best be harnessed for the good of all the inhabitants of whatever origin, by a combination of the efforts of the African himself, with improved methods of cultivation and land utilization, and the assistance, stimulus and guidance afforded by non-African agriculture, working side by side towards a common goal. In 1954 the demand for land continued and the number of rights of occupancy granted for residential and trading purposes was more than last year's figure.

RIGHTS OF OCCUPANCY GRANTED

	Agricultural and Pastoral		Trading and Residential	Miscellaneous (Missions, Schools, Factories, Labour Lines, Recreation Grounds, etc.)
	Long Term	Short Term		
1953	99 ..	7 ..	954 ..	306
1954	58 ..	7 ..	1,022 ..	279

Twenty-nine new trading centres were established. New alienations for agricultural and pastoral purposes covered some 91,928 acres in all. In addition to these Rights of Occupancy, 337 plots were allocated for the use of Government and High Commission departments.

The total area over which rights of occupancy are now held is 2,180,166 acres, which is about one per cent of the total land area of the territory. Registered freehold titles dating from the days of the German administration cover 471,213 acres.

The Land Utilization Board and the four provincial Land Utilization Committees have continued to advise on all matters affecting the development of land. The main responsibility for initiating schemes for the improved use of land is placed on these bodies.

LABOUR

There was no significant change in the general pattern of employment during the year. The supply of labour was generally sufficient to meet requirements although seasonal shortages were reported amongst agricultural concerns in the Northern Province, the tea industry in the Southern Highlands Province and the cotton ginning industry in the Lake Province. The shortage of labour in the Northern Province was aggravated to a certain extent by the removal early in the year of all Kikuyu as a result of Emergency Regulations but these were replaced later by Tanganyika Africans the majority of whom came from the Central Province. Elsewhere no serious difficulties in obtaining labour were reported.

Towards the end of the year a Government Sociologist commenced an enquiry into the economic and sociological factors associated with the voluntary movement of Tanganyika Africans from the south-western parts of the territory to employment on the copper belt in Northern Rhodesia and on the Rand.

An enumeration of Africans in paid employment was carried out on 31st August, 1954. This revealed that 439,000 were in employment on that date, a decrease of 9,177 compared with the previous year. The principal feature of note

was a fall of approximately 11,400 in the numbers employed in the sisal industry, or 7·5 per cent of the total labour force of the Industry, the figures being 151,800 in 1953 and 140,417 in 1954. This fall was probably attributable to economy measures imposed by managements as a result of the fall in price of sisal during the year.

There has been a further extension in the establishment in individual undertakings of joint staff and works committees resulting from implementation of the comprehensive statement of Government policy on the subject of industrial relations which was issued in 1953. The majority of such committees, whether in Government Departments or privately owned industrial undertakings, have operated with conspicuous success and are generally appreciated both by employers and workers as providing a convenient means for the discussion and settlement of matters of common interest affecting terms and conditions of employment.

The first batch of 272 pupil apprentices left the Government Trade School at the end of 1953 having completed the three years' course; with few exceptions these boys were successfully placed with either private or Government establishments for the two-year period of "on training". At the end of the year the second course consisting of 63 pupil apprentices was being placed in industry. Construction was commenced at Moshi of a second trade school.

The classes and numbers enrolled at the Government Trade School, Ifunda, at the end of 1954 were:—

	1st Year	2nd Year	3rd Year	Total
Carpenters and Joiners	30	25	23	78
Bricklayers/Masons	6	5	7	18
Painters/Signwriters	1	1	1	3
Plumbers	5	1	3	9
Welders	–	–	4	4
Turners	–	–	5	5
Blacksmiths	–	–	4	4
Electricians	9	10	8	27
Vehicle Mechanics	37	13	3	53
Tractor Mechanics	38	15	5	58
Tailors	4	3	–	7
Shoemakers	–	1	–	1
	130	74	63	267

Training is also provided by the industrial sections of certain Government and voluntary agency schools and by departments of both the Central Government and the East Africa High Commission services in agriculture, forestry, veterinary science, medical hygiene, printing, engineering and telecommunication services. The scope of these establishments is indicated by the following figures of Tanganyika Africans training in some of the more important departmental schools:—

Medical Department	228 men 167 women
Government Press	57 men
East African Railways and Harbours	167 men

There was no marked overall increase in wage rates paid during 1954 by private industry although civil servants received increases as a result of the Lidbury Commission.

The Workmen's Compensation (Amendment) Ordinance which widens the scope of the existing legislation was enacted during 1954 and will be brought into force on a date to be fixed.

The number of Trade Unions now registered in Tanganyika is seven with an estimated aggregate membership of 500.

Sixteen Employment Exchanges were operating at the end of the year; through them 9,310 Africans were placed in employment during 1954 compared with 8,037 in 1953.

NUMBER OF AFRICANS IN PAID EMPLOYMENT

1953	Enumeration	448,000
1954	Enumeration	439,000

The total African population of Tanganyika based on the 1948 Census is now estimated to be about 8,048,000.

The non-African population is now about 100,000.

INDUSTRIAL CLASSIFICATION OF AFRICAN WORKERS—AUGUST 1954

Agriculture, Forestry, Hunting and Fishing	218,094
Mining and Quarrying	15,453
Manufacturing	18,293
Construction	16,373
Electricity, Gas, Water and Sanitary Services (excluding local authorities)	1,376
Commerce	11,428
Transport, Storage and Communications (excluding Government)	6,535
Services	12,565
Government, High Commission and Local Authorities ..	100,596
Domestic service (not enumerated) estimated at	30,000
Unclassified workers	8,381
	439,094

No differentiation has been made between casual and permanently employed persons.

Currency and Credit Facilities

The supply of currency is supervised by the East African Currency Board, established in London. Currency is issued or redeemed in Tanganyika, Kenya, Uganda, Zanzibar, British Somaliland and Aden, in which countries it circulates freely, against sterling payment to or by the Board in London of the face value, subject to a commission of one-quarter per cent either way.

The Board's assets have been built up to give full cover for the circulation: there is no fiduciary issue, and there is no power to vary the parity of the East African shilling.

In 1954 the amount of currency in circulation in East Africa (excluding Aden and Somaliland) rose by nearly £3½ million. Evidence of cost of living statistics, which indicate moderate rises in the prices of some, but not all, articles, and of wage rates and local produce prices, explain this increase. During 1954, 72 local public and private companies with a nominal capital of £1,224,000 were registered. In 1953 there were 76 registrations with a nominal capital of £1,942,000.

During 1954, 42 foreign companies were registered with a nominal capital of £10,198,350, but this gives no indication of the extent of their operation in Tanganyika. It has become evident that the rapid expansion of commercial activity in recent years has given way to a period of stability and consolidation.

Most of the commercial banking in the territory is carried out by three banks incorporated in the United Kingdom. There is also a branch of a Netherlands bank in Dar es Salaam. The levelling off of the spectacular increases in deposits and advances of the post-war years corroborates other evidence of the stabilization of the economy. In the absence of facilities for holding liquid assets in local investment, and because of the need to keep sterling balances available in London for ready transfer to the Currency Board, the banks hold a major part of their assets in the United Kingdom.

The Post Office Savings Bank provides facilities for small depositors. The balance on deposit continues to grow.

The Land Bank has been in operation since 1st October, 1948, to provide loans for agricultural purposes on the security of land or chattels. The maximum amount of any loan is £10,000: but the maximum is further restricted to 70 per cent of the value of land or 75 per cent of the value of chattels: long term loans may be made for up to fifteen years, and short term up to five years. Loans outstanding at the end of 1954 totalled £523,171; loans issued were approximately £188,000 and repayments received approximately £105,000.

The Local Development Loan Fund makes short-term loans for agricultural purposes to individual Africans or Native Authorities, without necessarily requiring mortgage security, at a low rate of interest (usually two and a half per cent).

An African Productivity Loan Fund was started during the year.

The Local Councils Board, previously the Central Native Treasuries Board, receives on deposit the surplus balances of all Native Treasuries and makes loans from its funds to Native Treasuries to finance capital works. The total deposits at the end of 1954 amounted to £694,351 and the total of loans outstanding was £53,583.

An Urban Housing Loan Fund set up by Government makes loans to Africans to enable them to build houses of permanent materials in urban areas.

The Mining Loan Board had loans amounting to £533 outstanding at the end of 1954.

The Savings and Loans Society operated in Kenya, Uganda and Tanganyika to afford investment facilities at a fixed rate of interest with easy conditions of withdrawal, and to provide loans for the purchase or erection of houses. The Society is a subsidiary of the Pearl Insurance Co. The total sum advanced in the three territories now stands at approximately £1,000,000. The emphasis is upon loans to owner-occupiers but capital is also provided for commercial housing schemes.

The First Permanent Building Society, which operates to provide loans for the purchase or erection of houses, started in Tanganyika late in the year and by the end of the year had some £147,000 on loan in Dar es Salaam, Tanga and Morogoro.

Various self-help societies and trusts provide credit facilities for the members of particular religious brotherhoods. But there is no internal money or securities market even of a rudimentary nature, and it is still true that funds for large-scale activities cannot be raised locally.

	Currency in circulation in East Africa (including Somaliland and Aden) £		Post Office Savings Bank Deposits £
1938	6,500,000	1938	121,000
1948	20,195,000	1948	1,285,000
1953	41,043,000	1953	2,125,000
1954	44,500,000	1954	2,410,426

COMMERCIAL BANKS IN TANGANYIKA AND ZANZIBAR

POSITION AT 31ST DECEMBER (£'000)

	1938	1948	1953	1954
Liabilities:				
Deposits	1,799 ..	12,941 ..	23,049 ..	22,965
Balances due to other Banks	1,066 ..	385 ..	2,945 ..	3,210
Other Liabilities	45 ..	87 ..	574 ..	667
Total ..	2,910 ..	13,413 ..	26,568 ..	26,843
Assets:				
Cash	459 ..	850 ..	1,762 ..	2,190
Balances due from other Banks	896 ..	10,637 ..	16,691 ..	13,660
Loans for Industry	– ..	425 ..	2,574 ..	2,160
Loans for Agriculture	1,555 ..	184 ..	1,946 ..	3,753
Other Assets	– ..	1,317 ..	3,595 ..	5,080
Total ..	2,910 ..	13,413 ..	26,568 ..	26,843

PUBLIC FINANCE

The financial year was changed so as to run from July to June; this necessitated two budgets, one for the six months 1st January, 1954 to 30th June, 1954, the other for the year 1st July, 1954 to 30th June, 1955. The level of revenue and expenditure was approximately the same as in 1953.

Income tax was again the largest source of revenue, collections for the first six months of 1954 totalling £2,974,000 in which was included considerable payments of arrears. The revenue from import duties rose compared with 1953, though not to the high level of 1952.

A loan of £1,000,000 was received from the Lint and Seed Marketing Board bringing the total of the Public Debt to the end of December, 1954, to £11,003,470. Reserve and the surplus balance were approximately £12,400,000, just under two-thirds of which represents reserve tied to specific purposes (e.g. development, provident fund, sinking funds) while the remainder represents safety balance. Reserve and surplus balance investments, amounting to approximately £8,000,000 are placed in London.

The budget of urban local authorities, with the exception of the Municipality of Dar es Salaam, are included in the Central Government budget. A summary of revenue and expenditure of the Municipality, and of Native Treasuries in the past six years is included in the tables on the following page:—

CENTRAL GOVERNMENT FINANCE

£'000

Revenue	1949	1953	Jan.-June 1954	Estimates 1954/55
Direct Taxation:				
Income Tax	1,097	4,209	2,974	3,550
Native House and Poll Tax	962	1,738	1,246	1,355
Other	166	327	263	350
Direct Taxation:				
Import Duties	3,150	3,258	1,881	3,870
Excise Duties	557	1,011	599	1,240
Other	547	993	641	1,237
Provision of Goods and Services by Government Departments	338	770	407	897
Government Property, Mining Rents and Royalties	229	274	106	541
Forest Royalties	142	195	83	200
Other	1,016	1,034	718	968
Miscellaneous Revenue	383	934	217	832
Colonial Development and Welfare	566	1,135	490	699
Total Revenue (excluding transfer to reserves)*	9,152	15,594	9,622	15,498

Expenditure	1949	1953	Jan.-June 1954	Estimates 1954/55
Administration	712	1,108	658	1,280
Maintenance of Law and Order	629	1,289	785	1,504
Revenue Collection and Financial Control	234	410	181	368
Economic Services	1,029	2,327	1,356	2,817
Local Government	529	1,197	824	714
Social Services	1,428	3,197	1,734	3,805
Unallocated items	1,959	3,572	1,224	2,495
Other items	542	1,222	703	1,683
Development Plan	1,687	3,727	1,601	3,711
Total (excluding transfer to reserves)*	8,749	18,045	9,082	18,379

*Apparent errors in totals are due to rounding off figures to nearest £1,000.

LOCAL GOVERNMENT FINANCE

Dar es Salaam Municipality

£'000

	Revenue				Expenditure				
	Government Grants	Fees, Licences, Land Rents	Native Tax	Rates	Total	Administration and General	Roads and Works	Public Health	Total
1953	79	74	30	110	293	79	94	115	288
1954	74	85	30	166	355	134	68	133	335

NATIVE TREASURIES

	Revenue			Expenditure				
	Native Tax	Other	Total	Local Administration	Social Services	Natural Resources	Other	Total
1953	757	1,170	1,927	892	590	165	222	1,869
1954	765	1,425	2,190	1,014	778	263	299	2,354

II. PRODUCTION AND TRADE

AGRICULTURE

Production

The predominant aims of Tanganyika's agricultural policy continue to be the attainment of self-sufficiency in food supplies and the expansion of production of cash crops for export.

During 1954, Territorial self-sufficiency in staple foodstuffs was achieved in respect of maize, sorghum, millet and rice and it is expected that surpluses will be available for export when the 1955 harvest reaches the markets. On the other hand, overall self-sufficiency does not imply adequate harvests everywhere, and in fact, the year 1954 was characterized by the most severe food shortages ever experienced in the Central Province. In Ugogo extensive relief measures were necessary for the greater part of the year, as over large areas the 1954 harvest yielded food for two or three months only. Elsewhere food crops were adequate to meet all local requirements; in fact record sales of cereals (especially maize) were obtained in some areas, particularly in the Western Province, the lake shore area of the Lake Province and in the Iringa District of the Southern Highlands Province. In the Northern Province the amount of maize sold to the Grain Storage Department was the lowest for some years and in the Eastern Province erratic rains gave a moderate crop only.

There was a welcome swing over to sorghum in some of the marginal maize areas largely brought about by the announcement that as a temporary measure, the Grain Storage Department had agreed to purchase all white and off-white types, at guaranteed prices. The disposal of this crop, however, presented difficulties and towards the end of the year it was made known that the Grain Storage Department would only offer a much lower support price of Shs. 30/- per bag for white types in 1955. Total sales by growers of maize and sorghum in 1954 amounted to 65,869 tons.

The value of cassava in alleviating local food shortages was once more amply demonstrated in 1954 and greater attention is now being given to the distribution of mosaic-resistant varieties. The wheat position, however, is becoming less and less satisfactory as the African demand for white bread increases because suitable areas for wheat growing in the Territory are decidedly limited. It will be necessary as time goes on either to popularize a mixed-flour loaf, or to rely on imported grain.

In the 1953 report, it was pointed out that in relation to suitable land and water supplies, the present production of rice should be capable of very considerable increase; production in many areas depending at the moment almost entirely on natural flooding. Following on the preliminary survey of the Rufiji Basin made by a land and water use expert of the United Nations Food and Agricultural Organization towards the end of 1953, the same expert again returned to the Territory in 1954, and a great deal of progress was made in the necessary initial work of establishing hydrometric stations, river gauging and survey of experimental pilot farms. Small scale irrigation projects progressed in several areas and further experience was gained in regard to the possibilities of mechanized rice production in various parts of the Territory.

In addition to projects supervised by Government there have been further significant developments in the extension of the Tenant Farmers Schemes on

Overseas Food Corporation farms and results from the introduction of mechanization at Nachingwea indicate that the work output of an average African family hiring a tractor at critical periods is many times greater than the work output of a family dependant wholly on the hoe.

Experimental work on all important aspects of the production of all major crops continued at agricultural stations and in the field. As mentioned in previous reports, this work deals with agronomic trials, control of pests and diseases, soil studies and plant breeding research covering all crops of major importance. During 1954, marked success was achieved by improved strains of cotton distributed in the Lake and Eastern Provinces and the results of fertilizer trials in the Lake and Southern Highlands Provinces were embodied in general practice. Important advances were made in sorghum and maize breeding work, the improvement of the technique of copra production and in the control of a wide range of pests, ranging from American bollworm to grain-eating birds. Distribution of improved planting material of many kinds was continued throughout the Territory.

In several instances, 1954 saw the attainment of a record production of some of the major cash crops. The Territorial production of cotton lint reached a record figure of 102,328 bales (estimated) of which approximately 90,000 bales were produced in the Lake Province. Record crops of cashewnuts (12,543 tons); flue-cured tobacco (1,592 tons) and tea (1,599 tons) were also produced whilst production of other cash crops was in general above average; total production of sisal (line fibre and tow) amounting to 178,250 tons.

Good crops of all types of coffee were obtained and sold at generally high prices. There has been a brisk demand for selected seed or seedlings in the established coffee areas and since far greater attention is now being given to the coffee crop than formerly it is expected that overall production from the Territory will increase in the next few years. In the Kasulu Highlands of the Western Province, Native Authorities nurseries have distributed some 20,000 seedlings, and every effort is being made to ensure that the budding industry in this rather backward area is founded on sound lines.

The Overseas Food Corporation again suffered from drought at Kongwa but in spite of this two farms managed to do well.

The production of flue-cured tobacco has been proved to be profitable at Urambo in the Western Province and the first step took place in 1954 to examine the possibility of flue-cured tobacco leasehold farms as a future agricultural system for developing economically the large areas of land opened.

At Nachingwea in the Southern Province the 1954 season yielded good crops. Experimental development and agricultural work is to continue here until 1956; the future pattern of development depending on results obtained.

Acreages planted at each centre are shown below:—

	Groundnuts	Maize	Sorghum	Millet	Soya Beans	Tobacco	Other Crops	Total
Kongwa	2,370	5,898	5,602	—	—	—	440	14,310
Nachingwea	1,480	3,391	6,047	386	2,388	40	3,336	17,068
Urambo	444	2,160	2,373	2,442	1,035	380	4,006	12,440

Marketing

The purchase of wheat, maize, white sorghum and paddy remained under Government control during 1954. Basic guaranteed prices paid to producers were:—

Per 200 lb. naked:	1953	1954
Wheat Grade I	52/06 ..	52/50
Maize F.A.Q.	34/- ..	38/-
White Sorghum F.A.Q.	34/- ..	38/-
Paddy, Grade I (per 100 kilos) ..	60/- ..	60/-

Cotton marketing continued under the aegis of the Lint and Seed Marketing Board which fixed basic prices to growers at 62 cents per lb. in the Lake Province for AR grade and 15 cents for BR seed cotton. Prices paid elsewhere in the Territory were 134 cents per kilogram (60·79 cents per lb.) for Grade A and 33 cents per kilogram (14·97 cents per lb.) for Grade C seed cotton. In the Lake Province increased quantities of seed cotton were marketed through co-operative societies. There were no changes in the auction system for selling lint and cotton seed. The Uganda Lint Marketing Board handled Lake Province Lint, Lake Province seed was sold locally in Mwanza, and the Tanganyika Cotton Company handled all produce from the rest of the Territory.

As regards marketing of coffee, no further contracts were entered into with the Ministry of Food and all mild coffee was sold either on East African auctions or by forward contract with overseas buyers. With the exception of the small arabica crop produced by the Wameru in Arusha District, all African grown mild coffee was sold at the Moshi auctions, which have become firmly established as an important link in the coffee marketing system.

The Bukoba hard coffee crop continued to be sold by auction in Mombasa but a radical change in the marketing of the crop was made on 1st November, 1954, whereby the marketing of the crop was handed over by the Bukoba Native Coffee Board to the Bukoba Native Co-operative Union.

A Produce Inspection Service was started on the voluntary basis in January, 1954, at Mtwara port only, principally to deal with exports of cashew nuts and later extended to include cassava. There are as yet no facilities for fumigation but it is hoped that this will be introduced in the near future.

The Production Committees in the Arusha, Moshi, Mbulu, Iringa, Morogoro and Kilosa Districts continued to operate and gave valuable advice and assistance to Government in a variety of ways, including the routine work of advising on Planting Orders and Land Bank loans to farmers. As a result of crop losses due to drought periods, rust, army worm and depredations by birds, Guaranteed Minimum Return payments amounting to approximately £43,000 were made.

Lakes and Rivers

Exports of dried "dagaa" (*Stolothrissa Tanganicae*) from Lake Tanganyika have been maintained in spite of a general weakening of the market for this product. The use of pressure lamps has now been universally adopted by Tanganyika fishermen and this method of fishing is also spreading into the neighbouring waters of the Lake in Northern Rhodesia and the Belgian Congo. The increased fishing effort, resulting in more regular and larger landings, has led to a greatly increased consumption of dagaa by the local populations and a reduction in price to the consumer.

The prosperity enjoyed by successful African practitioners of this method has stimulated an interest in mechanization and at the end of the year some 20 canoes had been fitted with outboard engines which had been purchased by their owners at an average cost of £60 each.

The Lake Rukwa and Malagarasi Swamp *Tilapia* fisheries continued to produce valuable crops of fish in spite of weather difficulties.

Fish Farming

Experiments in rearing reliable strains of various species of *Tilapia* for Territorial distribution and in farming fish in association with rice continued at the Korogwe Station.

Experiments were started in rearing a species of snail-eating fish from Lake Victoria which it is hoped to make available for distribution to various small waters infested with Bilharzia.

Distribution of fry and fingerlings of species of *Tilapia* for stocking various waters throughout the Territory was maintained during the year.

Sea Fisheries

Hopes that the M.F.V. *Patoni* would be completely operational this year were not fulfilled. Although the ship came into commission in 1954, continuous trouble with the main engines was experienced on several fishing trips which were undertaken. In general the results of the few trawling trials which were made proved disappointing. Much valuable experience and information have however been gained by the close co-operation of Tanganyika officers with the inter-territorial organization working from Zanzibar.

Investigations of native fisheries at several points on the coast continue and a survey of fish sales in Dar es Salaam market was made.

EXPORTS FROM TANGANYIKA OF AGRICULTURAL PRODUCTS

	Highest Export prior to 1954		1953 Amount	1954 Amount	Export value 1954
	Year	Tons	Tons	Tons	£
Sisal	1953	171,151	171,151	167,642	10,902,109
Cotton lint	1953	14,749	14,749	12,111	3,356,844
Coffee	1952	18,619	15,239	19,382	10,002,726
Barley	1952	88	—	293	6,023
Beans and Pulses	1952	23,184	10,551	10,432	525,536
Beans, Soya	1953	674	674	522	21,371
Cashew nuts	1952	11,506	11,358	16,298	554,009
Castor seed	1952	12,345	11,754	9,609	396,518
Cassava	1952	15,177	561	1,714	27,850
Copra	1928	9,318	1,083	2,046	145,985
Fats	1948	1,689	69	91	5,882
Gum, Arabic	1950	2,319	1,346	1,534	141,357
Gum, Copal	1950	110	38	58	3,937
Groundnuts	1936	22,786	1,088	2,503	182,009
Kapok	1953	838	838	581	148,781
Maize	1952	8,353	234	—	—
Millet and Sorghum	1928	7,732	1,958	17	623
Onions	1948	2,418	187	872	3,829
Palm kernels	1953	578	578	674	32,158
Papain	1948	130	83	103	154,864
Pyrethrum	1945	697	155	136	40,472
Rice	1938	17,965	3	72	2,817
Rubber	1944	1,314	—	—	—
Sesame seed	1938	5,241	343	3,108	232,298
Sugar	1941	5,454	1	2	146
Sunflower seed	1952	17,708	6,180	10,202	322,550
Tea	1953	1,122	1,122	1,566	503,917
Tobacco	1948	1,421	333	350	66,529
Vegetable Oils	1940	2,268	1,063	723	80,920
Wattle Bark	1953	2,009	2,009	2,122	44,309
Wheat	1945	4,511	—	10	431
Essential Oils	1950	9	3	2	4,430
Total	—	—	261,319	274,775	£27,911,230

Livestock

Although drought conditions prevailed in the central and western parts of Tanganyika, they were not so severe as in 1953. The small stock population figures for the Territory continued to increase, and the estimated totals of cattle and small stock compared with adjusted totals for the previous year were as follows:—

	Cattle	Sheep	Goats
1953	6,632,588 ..	2,783,300 ..	3,719,500
1954	6,487,955 ..	2,990,000 ..	4,508,000

Culling orders were again issued in most overstocked districts, but sales were not generally increased. Cattle and small stock continued to be marketed at Native Authority livestock markets, and the total annual sales on primary markets were 316,106 cattle and 194,760 sheep and goats, which exceeded last year's record figure. Prices of slaughter cattle rose sharply during the latter part of the year but the average price of Shs. 123/77 over the year was slightly less than that of 1953. Messrs Tanganyika Packers Limited continued to buy, but the general shortage of slaughter cattle in relation to demand and the consequent increases in price reduced the numbers they could purchase for their Dar es Salaam and Arusha factories to 61,630 head.

The purchases up-country of hides was at a high level, though not quite so high as in 1953; there were, however, increases in purchases of sheep and goat skins. The overseas hide and skins market remained at a steady high level throughout the year until September, when prices fell considerably. As a result of this, exports from the territory of hides and goat skins were reduced, though exports of sheepskins were increased, as compared with the previous year.

Product	Exports	Value £
Dried hides	7,572,933 lb. ..	845,416
Wet salted hides	1,804,676 lb. ..	106,314
Dried Sheepskins	724,237 pieces ..	80,011
Dried Goatskins	1,402,580 pieces ..	289,213
		£1,320,954

The new legislation enacted during the previous year to control the hides and skins trade worked well, and standards of premises and selecting of hides appeared to improve. Although in some areas the proportion of suspension dried hides and skins increased greatly, the overall territorial picture was much the same as last year due to the numbers of "fallen" hides coming forward.

The production of clarified butter and ghee was again less than the previous year. Price control was, however, removed towards the end of the year, so that comparison of annual values of this product are not significant.

Although no development of the Ruvu River area took place, there were improvements in the coastal milk supplies due mainly to the better types of cattle being kept at dairies. The new Government dairy at Mtwara was stocked, and before the end of the year milk production had outstripped demand.

European farmers in the Northern and Southern Highlands Provinces showed great interest in livestock husbandry generally, while there are indications that much more interest in pigs is being shown near Arusha.

Forestry

Government's forest policy is that by 1962 eight per cent of land and swamp area of Tanganyika (or seventeen and a half million acres) should be reserved as forest and by the same date 40,000 acres of Forest Department plantation should be established.

During 1954 some 12,500 square miles of forest reserves were created including 717 square miles of Native Authority forest reserves. This brings the total area of forest reserves to approximately 24,000 square miles or 7·0 per cent of the land area of the territory. Forest Department plantations were increased by 2,000 acres to a total of 16,100, and included 700 acres of fast-growing exotic softwoods. Another 465 acres, mainly of fuel and pole species, were planted by Native Authorities.

The Colonial Development Corporation continued its wattle planting programme at Njombe, sowing 4,063 acres to bring the total to 27,853.

The commercial output of timber dropped from 54,000 tons in 1953 to approximately 40,000 tons in 1954, of which approximately 22,800 tons were exported to Kenya, Uganda and overseas.

There were thirty-six forest concessions in operation during the year; thirty-one for the production of timber, four for firewood and poles and one for baobab fibre. The largest producers of timber were again Kagera Sawmills, Ltd., Steel Brothers Ltd., and Grewal Sawmills Ltd.

Improvement of Beeswax

During 1954 the Beeswax organization was transferred to the Forest Department. Useful progress was made in improving the quality of beeswax for export and a start was made in building up a market for high quality Tanganyika honey.

Mining

During 1954 there was no notable expansion of private prospecting operations in Tanganyika but steady development towards increased production was continued at several of the larger mines, and with a greater output of diamonds the value of the Territory's mineral production during 1954 reached a new record, about £5 million. Exports of minerals, as distinct from production, are expected to have been about £4½ million in value. Finalized figures for the year are not yet available.

A comparative table showing details of exports of minerals during 1953 and 1954 is attached. It is emphasized that the 1954 figures are provisional as the annual statistics are not yet complete. Final figures will by given in the Annual Report of the Department of Mines already published.

Diamonds

At Mwadui Mine of Williamson Diamonds Ltd. the large new dragline excavator was erected, and at the end of the year the plant for handling and treating the much greater tonnage was nearing the final stages of completion. The output of diamonds during the year, about 318,000 carats was double that of the previous year, 156,869 carats, but because of the better recovery of small stones, the average value per carat fell somewhat. Production on the neighbouring diamond mine of Alamasi Ltd., continued but at a somewhat lower level.

Gold

The production of gold was slightly greater in weight than in 1953, but a little lower in value due to the disappearance of the gold premium.

Tangold Ltd., a partnership of New Consolidated Gold Fields Ltd., and the Colonial Development Corporation, continued sinking the inclined shaft at Kiabakari in Musoma District, and commenced cross-cutting at 100 feet vertical depth to the mineralized zones indicated by diamond drilling. At Geita underground development was pushed ahead and production maintained.

Lead

Exports of lead concentrates by Uruwira Minerals Ltd. from the pilot mill at Mpanda Mine were restricted by the preparation of the mine to provide the increased tonnages to be treated by the new mill which is almost completed and which will have a crushing capacity of 1,300 tons per day. Exports of concentrates from the pilot plant fell from 6,174 tons in 1953 to 4,694 tons in 1954.

Mica

The weight of sheet mica produced in 1954 was almost the same as in 1953, but the average price received was about 30 per cent lower. Interest in this mineral therefore slackened. In the South-West Uluguru Mountains a mica miners' co-operative society was formed. Its members, all Africans, mine mica in the area of a mining lease and market it collectively. Of the 78 tons of sheet mica and splittings exported during 1954 and provisionally valued at £74,503, 14 tons were consigned to the U.S.A. with a provisional valuation of £23,149.

Tin and Tungsten

Production levels of concentrates of these metals fell from those of the previous year though there are signs that the future will show improvement. With the price of tin at over £700 per ton for the greater part of the year, Colonial Development Corporation began an expansion of their productive operations which had been scaled down when the price of the metal declined in 1953. The expansion of the Kyerwa Syndicate Ltd. operation was delayed.

The successful operation of the new International Tin Agreement to stabilize the price of the metal within limits would be of great benefit to the Tanganyika tinfield where the future would appear to depend upon long term development policies.

With a recovery in the price of tungsten, two mines recommenced production.

Other Minerals

There were appreciable increases in exports of gypsum, lime and salt. Gypsum produced at Mkomasi on the Tanga Line is used in Kenya and Uganda cement works. The tonnage exported during 1954, 4,732 tons valued at approximately £10,339, was more than double that exported in 1953.

Lime produced near Mbeya, Kigoma and Arusha is exported to neighbouring territories. Salt is produced on the coast, at Ivuna in Mbeya District, and at Uvinza in Kigoma District. The salt works at Uvinza supplies the surrounding region including the Belgian Congo. Exports and local sales of salt amounted to 21,612 tons valued at about £178,561. These figures are records for this mineral.

About 500 tons of coal were produced and sold locally from a claim in Rungwe District. The largest deposits in the Songea and Njombe Districts with a proved reserve of over 200 million tons, await the provision of railway communications.

At the end of the year tenders to develop and work the Mbeya pyrochlore deposit, discovered and investigated by the Geological Survey, were being considered by Government.

During the year interest was evinced in prospecting for abrasive garnet, kyanite, graphite and magnesite, and the Geological Survey investigated deposits of these minerals. A claim was pegged over a deposit of meerschaum and the holder explored the possibilities of marketing the mineral for tobacco pipes.

Oil Prospecting

In December as a culmination to prospecting work done under the oil exploration licence granted in 1952 to the D'Arcy Exploration Co. Ltd., and the Shell Overseas Exploration Co. Ltd. jointly, His Excellency the Governor spudded-in on Mafia Island the first deep test-well for oil in Tanganyika. Geological exploration, including drilling continued in other parts of the coastal area. The operations in Tanganyika of the two oil groups are now under a jointly owned subsidiary Company, the D'Arcy/Shell Petroleum Development Co. of Tanganyika Ltd.

Mining Titles

At the close of the year there were current 10 Exclusive Prospecting Licences in respect of areas totalling in the aggregate 26 square miles, one oil exploration licence covering approximately 22,000 square miles and 1,834 mining claims and leases occupying a further 397 square miles.

Labour

Over the year mining and prospecting gave direct employment to an average of approximately 504 Europeans, 250 Asians and 19,108 Africans.

Conclusion

Although the year was not remarkable for any outstanding events in the Territory's mining industry, the progress made leads to a reasonable expectation of continued expansion in the future.

PRINCIPAL MINERALS EXPORTED (DOMESTIC PRODUCTION) 1954

Mineral	Unit	1953 (Actual Figures)		1954 (Provisional Figures	
		Quantity	Value	Quantity	Value
			£		£
Diamonds	(car)	170,509	1,765,518	329,947	3,107,241
Gold (refined)*	(Oz)	69,886	903,993	71,447	891,807
Graphite	(LT)	19	475	—	—
Gypsum	(LT)	1,713	4,922	4,732	10,339
Kaolin	(MT)	1,223	12,170	301	2,910
Kyanite	(LT)	20	320	—	—
Lead concentrates	(MT)	6,174	484,265	4,694	360,000
Lime	(LT)	629	2,608	870	3,914
Magnesite	(LT)	57	203	78	254
Meerschaum (crude)	(LT)	—	—	2	94
Mica: Sheet	(LT)	78	†106,312	78	74,503
Mica: Waste	(LT)	51	261	28	523
Salt	(MT)	5,629	55,378	6,866	68,828
Silver (refined)*	(Oz)	41,580	12,803	42,205	13,927
Tin concentrates	(LT)	62	34,994	54	27,330
Tungsten concentrates	(LT)	31	25,767	12	7,751
Uranium Ore	(LT)	—	—	0·05	146
Totals		—	3,410,800	—	4,569,567

* Excludes gold and silver contained in lead concentrates.
† Provisional.
Oz. Troy ounces.
car. Metric carats.
LT Long tons.
MT Metric tons.

Besides the above exports, there were produced and sold in Tanganyika during 1954, 14,745 tons of salt valued at £109,732; 5,076 tons of lime valued at £17,024 and building minerals to an estimated value of £338,560. Sales of other minerals amounted to approximately £1,535.

Geological Survey

The Geological Survey continued its dual functions of original mapping and the examination of mineral deposits. Because of the staff position it was found impossible to continue at the same pace as hitherto on geological mapping. This was therefore curtailed because of more immediate and urgent demands.

The Mineral Exploration Team consisting of United Nations Organization personnel under a Mining Geologist, together with a diamond driller and subordinate staff, commenced investigations of mineral possibilities in the east of the Territory.

The investigation of raw materials for cement manufacture was continued in the Eastern Province. No finality had been reached by the end of the year. The examination of known graphite deposits in the Uluguru Mountains was commenced. Garnet deposits in the Eastern and Tanga Provinces have been investigated, while gypsum in the Kilwa District also received attention.

Kyanite and magnesite in the Same District attracted some interest because the local people were endeavouring to develop these deposits.

The most important project, however, was the investigation of the Panda Hill carbonatite. This was done by diamond drilling and other methods and research of ore dressing problems and the recovery of pyrochlore from the carbonatite and from the overlaying residual soil was successfully undertaken by the laboratory. Mining companies were supplied with information and asked to submit proposals for the exploitation of the deposits.

Assistance was given to the Rufiji Basin survey in the examination of dam sites mainly on the Ruaha River. The improvements to the hydro-electric station at Pangani was also the subject of a geological report. Problems connected with the water supply for Dodoma were dealt with. A number of bulletins were published and others are in the course of preparation.

It is hoped that with the Mineral Exploration Team undertaking the investigation of all mineral deposits the Geological staff will be able to complete the preparation of field work for publication and continue with the geological mapping of the territory.

Industry

Outside the mining industry there were no new industrial projects developing on a major scale, but although no new industries involving considerable capital investment were established, those in being operated successfully and several new ventures of moderate dimensions came into being. A macaroni factory using flour from Northern Province wheat was established at Arusha. In Dar es Salaam a coir matting factory began to operate. At present, the local coconut coir is not entirely satisfactory for the manufacture of such mats and it is necessary to import coir from overseas. The manufacturers intend, however, to experiment with the retting of local coconut coir. The coconut coir is in a number of the factory's products used in conjunction with sisal fibre.

Another fruit juice factory began to operate in Dar es Salaam and a small steel rolling works was opened at Korogwe. Work on a cashew nut factory at Mtwara continued and the ever increasing production of cashew nuts in the Southern Province gives a bright hope of significant exports of decorticated nuts as soon as operatives have been sufficiently trained.

The wattle bark factory of the Colonial Development Corporation was brought nearer to completion and to encourage the local inhabitants to take part in the enterprise and to increase the raw material available for processing the Ubena Treasury has borrowed £160,000 from the Local Councils Board to make it possible for the Treasury to hold land planted with wattle trees by the Corporation and dispose of it in individual lots to local inhabitants on payment. The enterprise opens up the possibility of developing a range of products, such as charcoal, fibre board, and in conjunction with other trees, e.g. pines, pulp and cellulose.

The Milling Board, established under the Milling Ordinance and made responsible for the control and licensing of mills and the orderly promotion and development of the industry, met regularly throughout the year. Licences for new mills were issued in various parts of the Territory. The increased production of cotton in the Lake Province gave rise to applications for licences to mill cotton seed but the Board felt it necessary to discourage the expansion of milling capacity in the area around Mwanza since capacity there already appears more than adequate for the time being.

A factor of growing importance in the economy of the Territory is the timber industry. Government has paid special attention to increasing territorial forest resources, not only for climatic and agricultural reasons but also for the promotion of the timber industry. Timber mills are established in many parts and some new ventures were started during the year. An example of this is the export of sawn timber to Northern Rhodesia from a new mill in the Kasanga area of the Sumbawanga District. Production at Steel Bros. Rondo Plateau mill in the Southern Province has progressed and the bulk of the mninga produced was exported to South Africa. The value of wood and timber exported from the Territory in 1954 was £363,818.

The establishments registered under the Factories Ordinance in 1954 were as follows:—

Industry	Number of Factories		Total
	With Power	No Power	
Aerated Water Manufacture	32	19	51
Agricultural Plant Maintenance and Repair	60	–	60
Aircraft Maintenance	2	–	2
Aluminiumware Manufacture	2	–	2
Bacon Manufacture	4	1	5
Bicycle Assembly and Repairs	1	20	21
Boat Building and Repairing	5	–	5
Bread and Flour Confectionery	23	44	67
Breweries	1	1	2
Brick and Tile Manufacture	6	2	8
Can Manufacture	1	–	1
Chemical Products Manufacture	2	–	2
Coffee Curing	4	–	4
Coffee Pulping	58	25	83
Coir Fibre Processing	2	–	2
Copra Drying	2	2	4
Cotton Ginning	38	–	38
Cotton Weaving	1	–	1
Crop Processing	8	–	8
Dairy Produce	1	2	3

(*contd.*)

Industry	Number of Factories		Total
	With Power	No Power	
Dry Cleaning	4	2	6
Edible Oil Refining	4	–	4
Electrical Repairs	11	–	11
Electrical Power Generation	20	–	20
Electro-Plating	1	–	1
Engineering—General	40	2	42
Essential Oil Extraction	4	–	4
Fez Cap Manufacture	–	4	4
Fish Curing	1	–	1
Flour Milling	203	–	203
Food Canning	4	–	4
Fruit Cordial Manufacture	4	1	5
Hides and Skins Processing and Baling	4	24	28
Honey Processing	1	–	1
Ice Manufacture	10	–	10
Industrial Gas Manufacture	2	–	2
Jaggery Manufacture	33	1	34
Jewellers and Goldsmiths	2	22	24
Kapok Ginning	7	–	7
Laundering	2	2	4
Leather Goods Manufacture, etc.	3	–	3
Letterpress Printing	21	2	23
Locomotive and Rolling Stock Repairs	10	–	10
Marine Engineering	–	2	2
Mica Cutting and Grading	–	3	3
Milk Pasteurizing	1	–	1
Motor Vehicle Repairing	115	17	132
Paint Manufacture	1	–	1
Papain Manufacture	1	1	2
Petrol, Oil and Lubrication Packing	3	–	3
Pharmaceutical Manufacture	1	–	1
Photographic Developing and Printing	8	1	9
Precast Concrete Works	7	3	10
Pyrethrum Drying	1	–	1
Rice Mills and Hulleries	66	–	66
Rubber Processing	2	–	2
Salt Works	4	–	4
Saw Milling	81	1	82
Sewage Pumping	2	–	2
Sheet Metal Working	3	15	18
Shipbreaking	1	–	1
Shoe Making and Repairing	–	93	93
Sisal and Sansevieria Processing	225	1	226
Soap Manufacture	24	22	46
Stone grading and crushing	2	–	2
Sugar Confectionery	2	–	2
Sugar Manufacture	3	–	3
Tailoring and Dressmaking	31	730	761
Tanneries	2	–	2
Tea Manufacture	9	–	9
Textile dyeing and bleaching	2	–	2
Tobacco Processing	6	5	11
Toilet Goods other than soap	–	3	3
Typewriter and other light repairs	2	4	6
Tyre retreading	2	–	2
Vegetable Oil Extraction	72	–	72
Watch repairing	2	2	4
Water Supply	68	–	68
Woodworking—General	178	49	227
Wrought Iron Work	7	2	9
Total	1,578	1,130	2,708

Internal and External Trade

It was mentioned in the 1953 report that the pattern of internal and external trade was largely determined by two factors, the fall in the price of sisal and the failure of the rains. The depressed price of sisal continued to affect the Territory's economy, but some of the impact was cushioned by increased prices for coffee. The value of sisal exported in 1954 was £10,902,033. The value of coffee exported was £10,002,726 as against £5,818,836 in 1953. The volume of external trade was £69,757,780 which was an increase of something over £5,000,000 on 1953. Imports were up by £3·5m. and exports by some £1·7m. There was a decrease in the balance of trade by some £1·7m.

On the whole trading conditions in 1954 showed an improvement on those in 1953 but in the early months of the year the effects of the poor and badly distributed rainfall of 1953 were still being felt and demand for both consumers' and producers' goods was not very keen. The 1954 rainfall was better and with the exception of the Central Province the food supply was satisfactory. Surpluses of food crops and cash crops for internal consumption and export were on a fair scale and trade improved. It was reported in September that the bazaar trade was brisk but as the year ended conditions became quiet again.

The limited import of Japanese goods which took place during the year could not have had much influence on retail trade; the total import amounted only to £300,000, indicating a well stocked position and the extent of the hold which India has on certain cheaper lines of printed textiles. In 1955 Japanese imports will be admitted far less restrictedly and there was keen interest among importers at the end of the year. Stocks held by importers are believed to have run down and it is possible that some of the quietness in the bazaar trade at the end of the year was in anticipation of Japanese imports in 1955.

There were a number of local shows held in various parts of the Territory which served the useful purpose of bringing local producers, traders and importers into closer contact and there are increasing signs that more attention is being paid to the tastes and preferences of local African consumers who in the aggregate possess a considerable purchasing power.

It is recognized that the Territory's economy has relied very heavily in the past upon one major and two smaller exports, namely sisal, coffee and cotton. It is likely that the Territory will, for some time at least, continue to depend upon these three well-tried products, but there were reassuring signs in 1954 as far as external trade is concerned of some expansion in the range of the exports. Apart from the exports of canned meat which are an entirely post-war addition, there have been increases in the value and volume of certain other exports. The quality of hides and skins has shown an overall improvement, although the export value achieved was depressed by continuing fall in prices. There were significant exports of cashew nuts, tea, groundnuts, copra, castor seed, gum arabic, papain, beeswax and timber. The acreage planted with tobacco has very considerably increased and exports should mount. The value of minerals exported in 1954 was some £4½m. but that figure contained a heavy proportion of diamonds and it is hoped that the enterprises which are being developed will lead to a better balance.

There were no major shortages of supplies during the year, and progressive liberalization of trade with the Continent and elsewhere encouraged importation of a large variety of manufactured articles.

NET IMPORTS AND EXPORTS

£'000

Classification of Imports	1938	1948	1953	1954
Machinery and Vehicles	706	7,066	7,468	7,438
Textiles and Clothing	877	5,373	5,749	8,778
Base Metal Goods	322	3,225	3,641	3,617
Fuels and Lubricants	327	1,365	2,648	2,669
Food, Drink and Tobacco	550	2,284	3,204	2,744
Chemicals	111	557	846	1,279
Rubber	57	353	753	820
Paper	59	217	259	298
All Other Articles	528	2,203	3,859	4,319
Total	3,537	22,643	28,427	31,962

Classification of Domestic Exports	1938	1948	1953	1954
Sisal	1,425	8,930	12,742	10,902
Coffee	386	897	5,818	10,003
Cotton	380	1,328	4,827	3,357
Diamonds	4	1,040	2,100	3,129
Oil Seeds and Waxes	200	554	1,361	1,409
Other Food, Drink and Tobacco	423	1,620	3,096	2,806
Hides and Skins	202	499	1,655	1,531
Gold and Specie	589	503	917	901
Base Metals	50	53	581	398
Wood and Timber	21	146	426	383
All Other Articles	28	660	1,022	1,432
Total	3,708	16,230	34,545	36,251

Value of Imports from	1938	1948	1953	1954
United Kingdom	1,015	10,574	13,417	13,720
India	162	1,827	3,071	4,799
Japan	593	123	132	300
Germany	461	12	990	1,575
United States	242	2,961	2,023	1,041
Union of South Africa	60	880	1,891	1,521
Netherlands	106	–	962	1,160
Italy	15	485	728	957
Bahrein Island	–	170	869	878
Belgium	46	649	258	711
Persia	–	719	4	–
Other Countries	837	4,243	4,082	5,300
Total	3,537	22,643	28,427	31,962

Value of Domestic Exports to	1938	1948	1953	1954
United Kingdom	1,198	8,471	13,893	12,739
United States	175	1,146	5,616	4,813
Germany	282	–	2,208	3,503
India	251	753	1,995	1,866
Australia	–	438	906	873
Netherlands	140	–	1,358	1,712
Belgium	389	–	1,480	1,360
Union of South Africa	83	710	1,019	959
Canada	–	1,235	639	1,091
Japan	15	–	452	434
Other countries (including ships' stores)	1,175	3,477	4,979	6,901
Total	3,708	16,230	34,545	36,251
Value of Re-exports	361	950	1,399	1,545

Visible Balance of Trade

	Imports	Exports and Re-exports	Unfavourable Balance	Favourable Balance
1938	3,537	4,069	—	532
1948	22,643	17,180	5,163	—
1953	28,427	35,944	—	7,515
1954	31,962	37,795	—	5,833

NOTE: From 1953 transfers between Tanganyika and Uganda and Kenya for internal consumption are excluded from the figures in these tables. Detailed information which would be needed to make earlier figures correspond precisely is not available, but as the figures stand direct comparison is invalidated only in a few instances.

APPENDIX I

THE DEVELOPMENT PLAN: PROGRESS REPORTS

AGRICULTURAL DEVELOPMENT SCHEMES

Training of Agricultural Instructors, Ukiriguru.—Thirty-seven Instructors of the Agricultural Department and nineteen teachers completed their two-year training course. Forty-nine Instructors and five teachers completed their first year's training while forty-eight Instructors and thirty-two teachers entered upon it. Practical training continues to be emphasized and seventy acres of new land have been acquired. Clearing has begun and a ten-year rotation, involving a three-year ley has been instituted. The improved quality of students leaving Ukiriguru for district work again received favourable comment from officers in charge of provinces.

Improvement of Copra Industry.—On the coastal areas of Tanga Province the steady, if unspectacular, process of clearing up and burning or burying of dead and diseased palms continued and there are definite signs that the spread of the Rhinoceros Beetle is being controlled. There has been considerable progress in the Coconut Bonus Scheme, particularly in the Tanga District, and over fifty new plantations, each of which is larger than five acres in size, have been planted. During the year twelve nurseries spread out in the various expansion areas were planted with some 98,000 seed nuts. This service ensures that new plantations are provided with healthy planting material. In order to improve the quality of copra encouragement continued to be given to producers to build small kilns. A standard design has been adopted and fifteen kilns, costing approximately Shs. 400/- each were built or under construction between October, 1953, and October, 1954. Seven are already in production and some 45,000 lb. of kiln dried copra have been sold. A factory for the production of coir fibre was built during the year in Tanga and experiments are to be laid down to test the value of coir dust as a fertilizer.

In the Eastern Province, there has been some improvement in the standard of cultivation and plant sanitation. While the general standard is better than it was ten years ago there is still considerable room for improvement. The quality of copra varies considerably with the best quality, most of which is exported, being produced on Mafia Island. On the mainland the bulk of the low grade copra produced is used in the manufacture of soap. The Government nursery at Bagamoyo produced and sold 20,000 seedlings during 1954. There has been some increase in the acreage of palms planted during the year but the response to the Coconut Bonus scheme has been much less than in Tanga Province.

Bukoba Coffee Sub-Station, Maruku.—Trials and experiments designed to extend the coffee and banana plantations into these parts of Lake Victoria's littoral where there is at present only grass land on an extremely impoverished soil, continued throughout the year, and constituted the major activity of the sub-station. In addition, soil fertility trials with both finger and bullrush millet with various manurial treatments were carried out. Further observations on Kudzu and elephant grass were also continued.

Records of the milk given by the small dairy herd were kept and sheep and goats have been introduced.

Cotton Experimental Station, Ilonga.—Work has continued on the improvement of cotton strains for use in the Eastern Province, together with research into the control of insect pests, particularly American Bollworm. Research has also been carried out into the mechanical cultivation of food crops and selection work on local and imported strains of maize, sorghum, pulses and other food crops has received attention.

Fisheries (Inland).—The entire Kigoma–Ujiji "dagaa" fisheries fleet is now equipped with pressure lamps and "mwenge" fires are an extreme rarity in the northern section of Lake Tanganyika. The use of lamps has led to an increase in fishing effort with heavier landings of "dagaa". The emphasis of work on this fishery has now shifted to the improvement in the quality of the dried product and to problems connected with marketing. The fisheries base at Kigoma has been put on a care and maintenance basis.

At the fish farming experimental station, Korogwe, where there are twenty-seven ponds in all, work continued on supplying seven different species of fry to the public in all parts of the Territory. Further information on production yields was obtained and the training of Africans in fishery techniques made good progress. Co-operation with the Medical Department continued in connection with the biological control of bilharzia and malaria by means of fish. In other parts of the Territory disappointing results were reported, and the causes are being investigated.

Fisheries (Marine).—Some progress was made during the year but engine trouble in the M.F.V. *Patoni* resulted in a loss of time at sea. Fishing by means of handlines and otter trawl was carried out but results were disappointing. Trawling at a depth of one hundred and twenty fathoms, in an intensive search for deep water fish is to be tried out and should provide interesting results as this will be the first time fishing at such a depth will have been attempted off Tanganyika.

Food Production Farm.—Lupiro and Kivukoni—During 1954 some 404 tons of paddy were obtained from 485 harvested acres, despite the fact that the crop again suffered from poor rainfall distribution during the latter part of the growing period. Nevertheless the year's working again showed a clear margin of profit after all charges had been taken into account. Search for a satisfactory strain of rice for combining continues. Other experimental work included trials with fertilizers, herbicides at varying rates of applications and different methods of application and on seed rates.

Natural Resources School, Tengeru.—The school year opened with a new intake of 107 first year Natural Resources students making a total roll of 199 and drawn from nearly all Districts in Tanganyika. As is to be expected in a new and developing school, building construction and the expansion of field and experimental plots of agricultural, forest and horticultural crops on the school's 430 acres was given first attention. The Dairy Farm was also developed and in general every endeavour was made to organize practical field and garden work so as to give an adequate correlation with the theory taught in classrooms and laboratories. The first batch of students will "graduate" in 1955.

Veterinary Development Schemes

Central Breeding Station, Mpwapwa.—Line breeding from a chosen strain continues, while a scheme for the production of proven sires is in progress. Cattle and poultry are being produced for supply to private farmers in other parts of the country, and also to other Government farms.

Northern Province Stock Farm.—Building was completed and the farm stocked to capacity. The breeding policy is now part of an overall territorial plan, though stock are available for purchase by private individuals.

Demonstration Farm, East Kilimanjaro.—Stock have done well on this farm and it has been decided to hand the establishment over to the control of the local Native Authority.

African Veterinary Training Centre, Mpwapwa.—The second year came to a successful close with 10 students passing out as trained Veterinary Assistants. Another 12 students are due to start their training in February, 1955.

Southern Highlands Stock Farm, Iheme.—This farm is also to be controlled as a local government farm of purely local interest.

Veterinary Centres.—Ten new Veterinary centres have been completed and staffed during the year, and these are now beginning to form a useful link with the African cattle owner whereby improved methods of animal husbandry can be demonstrated. There are now a total of 20 Veterinary Centres operating in the Territory.

Pilot Ranching Scheme—Mkata Plains.—It is expected that this scheme will soon be self-financing. 1954 has been a good year and although it has not been possible to sell many fat bullocks, those that were sold commanded a price of Shs. 45/-per 100 lb. live weight. Some 6,000 bales of hay were produced.

General Local Development Schemes

Local Development Loan Fund.—This Fund, which has a capital of £100,000 is intended entirely for loans to Africans that will assist with the development of natural resources projects. In 1954, 84 loans were made, totalling £16,148, and varying between £25 and £1,000 each. At the end of December, 1954, there were 119 current loans and the total amount of capital outstanding was £48,968. Two loans were written off, both for small amounts. A few individuals have failed to use their loans for the purpose for which they were granted, but the procedure now followed is that most loans are only granted in instalments; the second and subsequent instalments being subject to suitable progress reports. This has already resulted in a higher standard of utilization of the funds loaned.

African Productivity Loan Fund.—This fund also has a capital of £100,000, granted from the Foreign Operations Administration of the United States Government. The funds were received towards the end of 1954, and up to the end of the year only two loans, totalling £140 had been authorized. This Fund has a very much wider scope than the Local Development Loan Fund, and, in addition to loans being granted for the development of natural resources projects, they can also be used for industrial projects, such as the purchase of maize milling machinery, carpenters' tools, tinsmiths' equipment, etc.

Urban Housing Loan Fund.—Up to the end of 1954 three loans totalling £1,200 had been authorized. The slowness in getting this fund into its stride is due to the difficulties which have to be surmounted in granting long-term Rights of Occupancy to Africans in high density areas. When these high density areas were originally laid out it was not then anticipated that there would be a demand for long-term Rights of Occupancy, and no accurate surveys were done. It is hoped to surmount these difficulties in the near future.

Uluguru Land Usage Scheme.—Beginning in 1953 and continuing in 1954, emphasis has been placed on educating and training the people in the reasons for and methods of soil conservation. Methods used have been courses of from ten days to a fortnight for selected leaders, and one or two days' schooling using demonstrations and visual aids, for the cultivators in their own villages—called "Bush schools" followed by practical instruction in the field. The benefit of these methods began to be apparent in 1954 when in several village headmen's areas the people were convinced of the value of what they were being taught and as a result began to dig bench terraces by combined communal effort, imposing on themselves a rule that both men and women should turn out on three days every week for terracing. The result was that in these areas in 1954 the annual stint per cultivator of 300 running yards was exceeded by as much as from five to seven fold. The output of terraces in these areas made up for the backwardness elsewhere and the district target was achieved. Four times as many terraces were dug in 1954 as in 1953, and the output in the first two months of 1955 was five times as many terraces and ten times as much ridging as in the same period of 1954. As a temporary measure trash bunding was adopted over most of the Ulugurus, and some progress with planting of barrier hedges, and making compost was made in the Mgeta area where terracing has already been adopted. Tree planting on steep slopes and coffee planting has continued at the same rate as in previous years.

Usambara Development Scheme.—In the hills the results of several years of effort are now at last beginning to be truly visible. During this period for the first time there are some jumbeates in which Scheme measures are now in their fifth year, and in these jumbeates land of slopes of under 25 degrees is almost totally under tie-ridge cultivation. At the same time the Scheme has been extended to cover all those hill jumbeates to which it has not hitherto been introduced. Not only in tie-ridging, but in all other aspects also of this Scheme there has been a considerable speeding up of work during the current year, particularly in the planting of steep land with bananas and other perennial crops, and in control of land under irrigation.

In the plains experimental and demonstration agricultural work has continued, particularly on irrigation trials. In most dry-land areas in Lushoto District sufficient data has now been obtained, but experiments have been extended into the proposed expansion area of North East Handeni. The Mlalo–Kitivo Road has been completed, and improvements have been carried out to communications in the plains.

Experimental Station, Mahiwa.—A number of experiments were carried out to increase rice production. These included a rotation experiment which has still some time to run, a variety trial, and fertilizer and weedicide experiments. One variety trial was also used to test the possibilities of fish production in rice dams. This was not successful.

Agricultural Training Course, Mahiwa.—Thirty-six out of forty students completed the third course in July. This course is intended to teach the agricultural policy of the Province and has a strong practical bias. In future at least twelve school teachers will be included in the students.

Puchapucha Tobacco Farm.—A small farm was opened during the year in Tunduru District as an experiment. As well as tobacco trials a number of crop rotations will be tried.

Development of Sukumaland.—The Sukumaland Scheme underwent considerable change. The Headquarters was moved to Mwanza; the tractors of the dam digging unit were put under the control of the Water Development Department and the vehicles transferred to the five Sukumaland Districts for the use of the Field Officers.

Four large dams were built mechanically, two in Maswa and one each in Kwimba and Mwanza Districts. Twenty-eight hand-built dams were completed and others were surveyed.

In Geita District eighty square miles of bush were cleared and six hundred and twenty-two homesteads established on half of this area. Settlement is under strict control and full soil protection measures are taken.

Bush clearing was also carried out in Maswa and Kwimba Districts, while in Shinyanga the effort was concentrated on rehabilitation measures in Isunganholo parish.

In addition various dams were piped and rice nurseries were constructed in Kwimba District.

Topographical Surveys continued and two new maps of Maswa District were made.

The Masai Development Plan.—The rate of progress achieved in 1953 was maintained and the first stage of the plan is almost complete. Owing to the speed with which new water supplies were installed in 1953, plans were made for the emphasis to be changed from the development of water supplies to the clearing of tsetse bush. In the event, however, the increased tsetse clearing programme could not be carried out owing to shortage of labour.

In order to increase their contribution, the Federal Council agreed to a levy of an additional Shs. 10/- per head as a development rate, and, up to date, the Masai have contributed more than £54,000 towards the cost of the Plan.

31,105 cattle were sold; the target was 27,000. Technical services were maintained in advance of construction work.

Four water pipe lines were installed. Three dams were built, three successful boreholes were drilled and eight drilled in previous years were equipped with pumping machinery, storage tanks and troughs. Revised systems of grazing control are drawn up in each area as new water supplies are completed. At boreholes the number of stock watered is controlled by limiting the amount of diesel oil issued to each engine.

Colonial Insecticide Research

The Colonial Insecticide Research Unit based at Arusha continued its experiments on the control of tsetse fly and the use of various defoliants, arboricides and herbicides under tropical conditions. Most of the work was carried out in Tanganyika and in conjunction with the Agricultural Department experiments were continued at Ilonga on the use of the techniques learned under actual field conditions. The unit also assisted in the experiments being carried out by the Agricultural Department with a view to controlling grain-eating birds which have caused damage in the Northern Province. All expenditure, with the exception of 25 per cent of the expenditure at Ilonga is met from the Central Research Allocation of Colonial Development and Welfare funds. Government and the Lint and Seed Marketing Board each contribute 12½ per cent towards the Ilonga experiments.

Development of Rural Water Supplies

During the year 1954 considerable progress has been made with the construction of dams, gravity pipe lines, pumped hydraulic ram and borehole supplies. This was possible mainly owing to the availability of more earth-moving plant. The more important works carried out during the year included an irrigation Pilot Scheme to serve 350 acres, a 36-inch diameter Tower Sluice (partly completed), 102 earth dams, with a total storage capacity of over 3,000 million gallons, 28 pipe lines for new schemes and extensions to existing supplies, 47 pump supplies and 16 wells. In addition 59 new boreholes were drilled and 10 existing ones cleaned. The total footage was 15,692 feet, not counting Banka Drilling for exploratory works.

Numerous pump installations for boreholes and wells were also provided.

Two irrigation schemes covering an area of approximately 6,300 acres were investigated and surveyed. New gauging stations were sited and the collection of hydrological data was continued.

In addition extensive aerial surveys were initiated and are being continued.

Roads

Lindi–Mtama Road.—It was decided early in the year to terminate construction at Mingoyo. The work was completed, the first five miles from Lindi having a bituminous surface and the remainder gravel.

Dar es Salaam–Morogoro Road (120 *miles*).—This is 90 per cent complete. A contract was made for the last 12 miles of this road with Messrs. Stirling-Astaldi (Tanganyika) Ltd. The remainder of the road was opened to all types of traffic.

Morogoro–Iringa Road (200 *miles*).—This is being constructed by direct labour, with the exception of a 14-mile length in the Iovi Valley, which is on contract to Messrs. East African Enterprises. The first 73 miles from Morogoro to Mikumi were opened to traffic. An access track is open between Mikumi and Mbuyuni. Over 30 bridges spanning from 12 to 110 feet have been completed.

Tanga–Korogwe Road (56 *miles*).—The road was opened except for the 280-foot bridge over the Pangani River. The surface broke up for some 6 miles, due apparently to the failure of the base course. The consulting engineers are investigating this.

Namanga–Arusha–Himo Road (140 *miles*).—The whole road was completed by the contractor and handed over to the Public Works Department for maintenance.

East-West Trunk Road.—Useful progress mainly by hand labour was made. West of Dodoma a 13-mile embankment was made across the Bahi Depression, and to the east a 10-mile stretch is being constructed in addition to lesser works in other parts.

The Luiche Swamp Diversion (12½ *miles*). Construction was started and about 3½ miles of road formed. Abutments for the Luiche Bridge, a single 100-foot span, were completed.

Township Water Supplies and Drainage

The rating system was reviewed and new rates were introduced. The effect of these is due to be re-examined in 1955.

A scheme was accepted in principle to pipe water from the Ruvu River to Dar es Salaam, and preliminary surveys, etc., are in hand.

Some 14 miles of pipe line were laid in Dar es Salaam; 13 new kiosks and 974 new meters installed.

The Makutapora Scheme at Dodoma progressed considerably. This should be ready early in 1955, and a sufficient supply ensured for many years.

At Singida two successful boreholes were sunk, which are intended to supply water to the public.

A gravity supply from the Sagara Springs is being installed by the East African Railways and Harbours at Kongwa.

Investigation is being made into the possibility of increasing the supply at Tabora.

A new scheme has been drawn up for Ujiji and enquiries made for plant and materials.

A new scheme has been started at Mwanza.

The Iringa project was completed and has worked satisfactorily and at Mtwara two successful boreholes were sunk.

Work was also carried out at Mbeya and Mbeya School, Tukuyu, Arusha, Lushoto, Kilwa Masoko and Songea.

Other Public Buildings and Works

Colito Barracks.—Works included Officers' and Sergeants' messes and an African Sergeants' mess.

Housing.—Ninety-eight Senior Service and 44 Junior Service houses were completed.

African Urban Housing.—397 houses were completed during the perido January to June. Owing to the reorganization of the financial year it is not possible to give the total for the whole of 1954.

Broadcasting Station, Dar es Salaam.—By the end of the year the building was almost completed.

Medical Buildings

New Hospital, Dar es Salaam.—The foundation stone was laid in August by His Excellency the Governor. By the end of the year over half the site work, including hedging and road fencing, was complete. Work had started on the administration block, and the contract for the nurses' hostel had been signed.

Nzega Hospital.—The operating theatre, two 26-bed wards and the isolation block have been completed, and the kitchen and laundry block nearly so.

Extensions to Mirembe Hospital.—Three new wards and an occupational therapy block were all but completed.

Lindi Hospital.—This new 92-bed hospital was completed and opened.

Other Medical Buildings.—Work on Mbulu and Njombe Hospitals, Mnazi Mmoja Clinic and the General Hospital, Dodoma, advanced considerably, and extensions were made at Moshi and Oldeani. Work continued at Sumbawanga. A clinic was completed and opened at Ilala.

Education Buildings

Secondary Schools, Tabora, Songea, Mjumbe.—These schools were virtually completed by the end of the year.

European Primary School, Arusha.—The teachers' quarters were completed and the contract nearly finished.

Government Indian Secondary School.—A new laboratory was added to this school.

The following works were in progress at the end of the year—additions to the Natural Resources School at Tengeru, Trade School, Moshi, St. George's and St. Michael's, Iringa, European School, Mbeya, Government Primary School, Arusha, Girls Middle School, Same, African Girls School, Tabora, and seven primary schools in various parts of the country.

Social Development

In the field of community development, work has continued on the lines described in previous reports. Funds have again been made available to assist with self-help schemes, such as well-digging, road-making, village betterment projects and similar works in which local initiative is fostered and given practical assistance. In certain district schools development officers have been assisting with the implementation of development schemes such as those in the Pare Mountains and in the Arusha District. In the latter area progress has been made in interesting a most conservative tribe (closely allied to the Masai) in projects for their own betterment. Literacy classes and women's clubs have been asked for and have proved very popular.

The work amongst women has continued, and in the Bukoba and Pare Districts women's clubs have increased in popularity and number; in the former district one new club was established during the year making a total of nine; in the latter the corresponding numbers are eight and twenty-seven.

Women's clubs are also becoming popular in the Arusha and Moshi Districts of the Northern Province, and in the hitherto somewhat remote Makonde plateau in the Southern Province where a remarkable upsurge of interest in social development has taken place.

The popularity of the local broadcasting service Sauti ya Dar es Salaam has continued to grow and on an average 450 letters a month are now received from listeners. The experimental schools broadcast was expanded and proved very successful. At the end of the year work was almost finished on the new studios and arrangements were complete for the installation of a new 20 kw. transmitter which, it is hoped, will give territory-wide cover to programmes put out from Dar es Salaam.

APPENDIX II

THE DEVELOPMENT BUDGET—STATEMENT OF EXPENDITURE

(Part II & III of the Estimates)

Details of Expenditure	Total Expenditure to 31.12.52	Actual Expenditure 1953	Actual Expenditure first six months 1954	Total Expenditure to 30.6.54	Estimated Expenditure 1954/55
Conservation and Development of Natural Resources	2,161,711	387,869	200,326	2,749,906	436,990
Development of Rural Water Supplies	946,607	103,820	67,512	1,117,939	383,370
Roads	4,504,280	1,608,558	689,512	6,802,350	1,219,000
Aerodromes	574,155	296,386	137,252	1,007,793	133,221
Social Services	1,380,236	235,382	118,301	1,733,919	578,925
Township Development	1,472,898	467,598	182,833	2,123,329	493,500
Public Buildings and Works ..	3,533,385	394,975	122,899	4,051,259	233,348
African Urban Housing	298,871	154,654	57,150	510,675	223,000
Miscellaneous	511,396	50,000	25,000	586,396	—
Total ..	15,383,539	3,699,242	1,600,785	20,683,566	3,701,354